

TEST REPORT	
Report Number..... :	91300-24-01-PP002
Date of issue	2024.12.17
Tested by (+signature)	Duke Chen 
Approved by (+signature).... :	Jason Gao 
Testing Laboratory name..... :	SLG-CPC Testlaboratory Co., Ltd.
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Applicant's name	Dong Guan City Luckking Electronics Co.,Ltd
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Manufacturer's name	Dong Guan City Luckking Electronics Co.,Ltd
Address	201 No. 6, Fengqing Road, Fenghuanggang Village, Tangxia Town,Dongguan City Guangdong Province P.R.China
Factory's name	Dong Guan City Luckking Electronics Co.,Ltd
Address	201 No. 6, Fengqing Road, Fenghuanggang Village, Tangxia Town,Dongguan City Guangdong Province P.R.China
Standard(s)	FCC 47 CFR Part 15, Subpart C
Test item description..... :	Bluetooth speaker
Trade Mark..... :	LUCKKING
Model	LKS057X
FCC ID..... :	2BGYK-LKS057X
Date of receipt of test item .. :	2024.12.06
Date (s) of performance of test..... :	2024.12.06-2024.12.15
Summary of Test Results..... :	Pass
The Summary of Test Results based on a technical opinion belongs to the standard(s).	
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TABLE OF CONTENT

TABLE OF CONTENT	2
1. SUMMARY OF TEST RESULTS.....	3
2. GENERAL INFORMATION	4
2.1. Description of Device (EUT)	4
2.2. Independent Operation Modes	5
2.3. Description of Test Facility	5
2.4. Description of Support Device	6
2.5. Measurement Uncertainty.....	6
3. MEASURING DEVICE AND TEST EQUIPMENT	7
3.1. MEASUREMENT EQUIPMENT USED.....	7
4. 20DB BANDWIDTH	7
4.1. Test Procedure	8
4.2. Test Results.....	8
5. POWER LINE CONDUCTED EMISSION MEASUREMENT	9
5.1. Block Diagram of Test Setup.....	9
5.2. Limits.....	9
5.3. Test Procedure	9
5.4. Measuring Results	10
6. RADIATED EMISSION TEST	11
6.1. Measurement Procedure	11
6.2. Test SET-UP (Block Diagram of Configuration)	11
6.3. Radiated Emission Limit	12
6.4. Measurement Result	13

1. SUMMARY OF TEST RESULTS

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Emission	FCC Part 15, Subpart C- Section 15.207 ANSI C63.10-2013	N/A
Radiated Emission	FCC Part 15, Subpart C- Section 15.209 ANSI C63.10-2013	Pass
20dB Bandwidth	FCC Part 15, Subpart C- Section 15.215 ANSI C63.10-2013	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name	Bluetooth speaker
Model Name	LKS057X
Operation frequency	115-205KHz
Modulation Type	FSK
Antenna Type	Inductive Loop Antenna with 0dBi
Wireless Charging	5W Max
Antenna Gain:	0dbi
Connecting I/O Port(s)	Please refer to the User's Manual

2.2. Independent Operation Modes

	Mode	TEST MODE DESCRIPTION
	1.	Stand-by mode
	2.	Charging
	3	Bluetooth speaker
Note: 1. All test modes were pre - tested, but we only recorded the worst case in this report.		

2.3. Description of Test Facility

Site Description

FCC recognition of accreditation for SLG-CPC Test laboratory Co., Ltd.

Designation Number: CN1287

Test Firm Registration:394054

2.4. Description of Support Device

No.	Equipment	Trade name	Model	S/N	Input/ Output
1	Bluetooth speaker test module	/	YBZ	/	5W Max
2.					
3.					

2.5. Measurement Uncertainty

Test Item	Uncertainty
Occupied Channel Bandwidth	: $\pm 2.3\%$
Conducted Emission Uncertainty	: 3.08dB
Radiated Emission Uncertainty (3m Chamber)	: 3.60dB (30M~1GHz) 4.48dB (1~6GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. MEASUREMENT EQUIPMENT USED

Equipment	Model	Manufacturer	S/N	Last Cal.	DUE Cal.
RF Connected Test					
Vector Signal Generater	Rohde & Schwarz	SMBV100B(6G)	101166	2024/06/03	1 year
Analog Signal Generator	Rohde & Schwarz	SMB100A(40G)	181333	2024/06/01	1 year
Signal Analyzer	Rohde & Schwarz	FSV40	101527	2024/03/28	1 year
Power Analyzer	Rohde & Schwarz	OSP-B157W8	N/A	2024/06/03	1 year
Wideband Radio Communication Tester	R&S	CMW270	101985	2024/06/15	1 year
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	166898	2024/06/15	1 year
Spectrum Analyzer	Agilent	E4408B	MY44211139	2024/11/07	1 year
Temperature&Humidity test chamber	ESPEC	VC 4018	/	2024/03/28	1 year
Radiated Emission Test					
EMI Test Receiver	KEYSIGHT	N9010A	MY56070465	2024/12/05	1 year
EMI Test Receiver	Rohde & Schwarz	FSV40	101511	2024/03/28	1 year
Bilog Antenna	Schwarzbeck	VULB 9163	01335	2024/04/20	3 year
Power Amplifier	EMEC	EM330	060676	2022/12/07	3 year
Cable	Tuyue	F4309	L-400-NmNm-1 2000	2024/12/05	1 year
Horn Antenna	Schwarzbeck	BBHA9120D	1779	2022/04/21	3 year
Horn Antenna	Schwarzbeck	BBHA9170	00954	2022/09/13	3 year
Power Amplifier	Rohde & Schwarz	SCU-18F	180118	2022/04/21	3 year
Active Loop Antenna	ETS LINDGREN	6512	41623	2022/04/23	3 year
Test Software	Farad	EZ-EMC	Ver.CPC-3A1	/	/
Conducted Emission Test					
LISN	Schwarzbeck	NSLK 8127	8127-892	2024/03/20	1 year
EMI Test Receiver	R&S	ESR3	102124	2024/12/05	1 year
Pulse Limiter	R&S	ESH3-Z2	357.8810.52	2024/12/05	1 year
Test Software	Farad	EZ-EMC	Ver.CPC-3A1	/	/

4. 20DB BANDWIDTH

4.1. Test Procedure

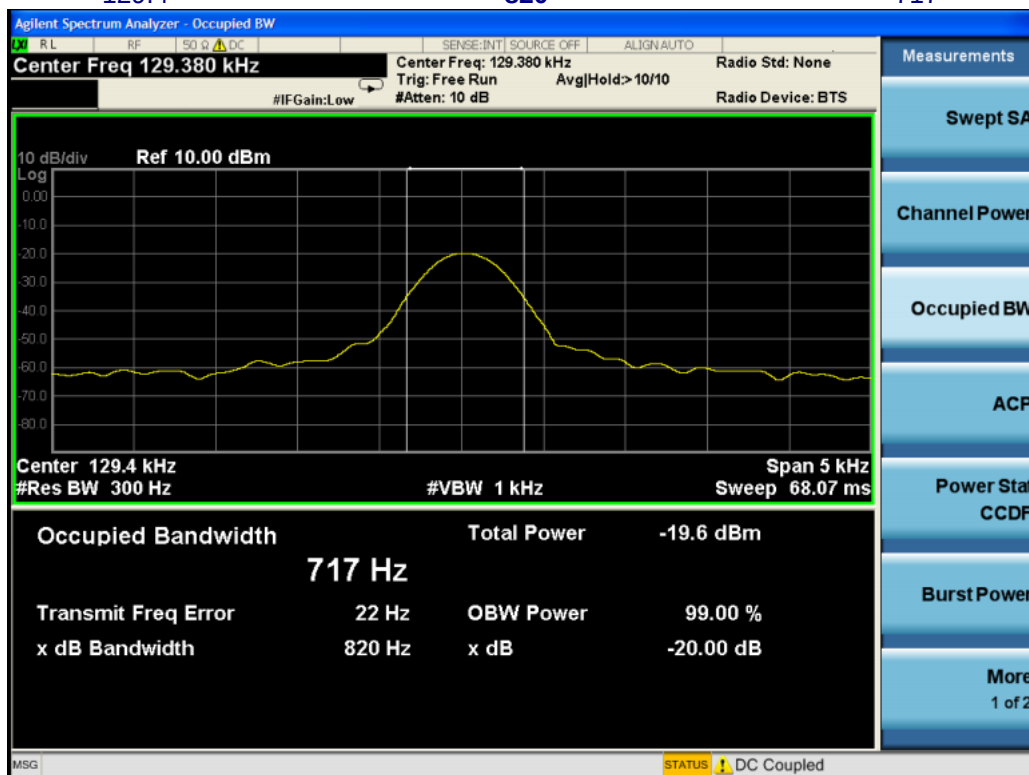
Set to the maximum power setting and enable the EUT transmit continuously

- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
 - The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW.
 - Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation.
 - The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement
 - Set detection mode to peak and trace mode to max hold.
 - Determine the “-xx dB down amplitude” using [(reference value) - xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- Measure and record the results in the test report.

4.2. Test Results

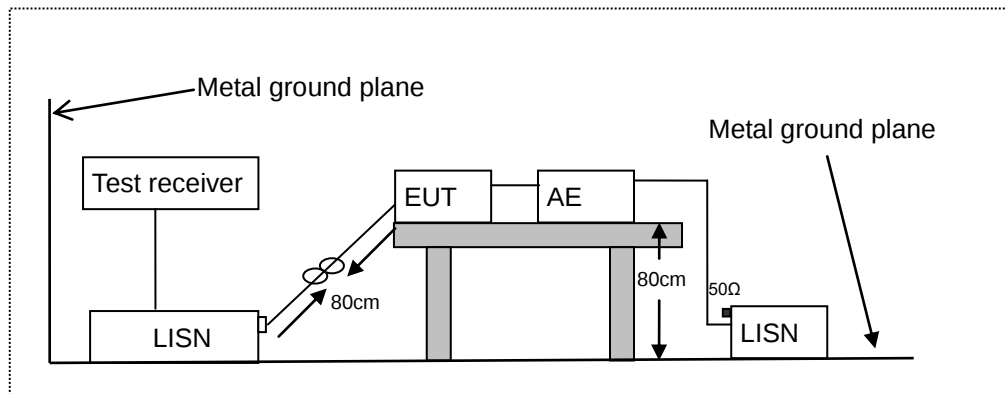
Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300 Hz to perform the occupied bandwidth test.

Temperature:	21°C	Test Date:	Dec 13, 2024
Humidity:	53 %	Test By:	Ken
Frequency	129.4 kHz	20 dB occupied bandwidth	99% occupied bandwidth
	129.4	Hz	Hz
		820	717



5. POWER LINE CONDUCTED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup



LISN: Line Impedance Stabilization Network

AE: Associated equipment

EUT: Equipment under test

5.2. Limits

FCC Part 15.207

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
 NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

5.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a line impedance stabilization network (LISN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other LISN.

The LISN provides 50 ohm coupling impedance for the measuring instrument.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

Test results were obtained from the following equation:

Emission Level (dB μ V) = LISN Factor (dB) + Cable Loss (dB) + Reading (dB μ V)

Margin (dB) = Emission Level (dB μ V) - Limit (dB μ V)

5.4. Measuring Results

N/A

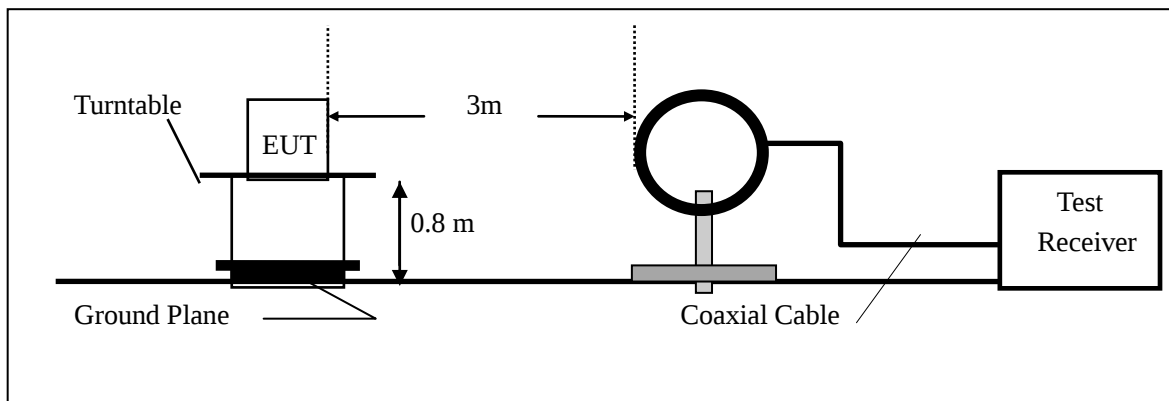
6. RADIATED EMISSION TEST

6.1. Measurement Procedure

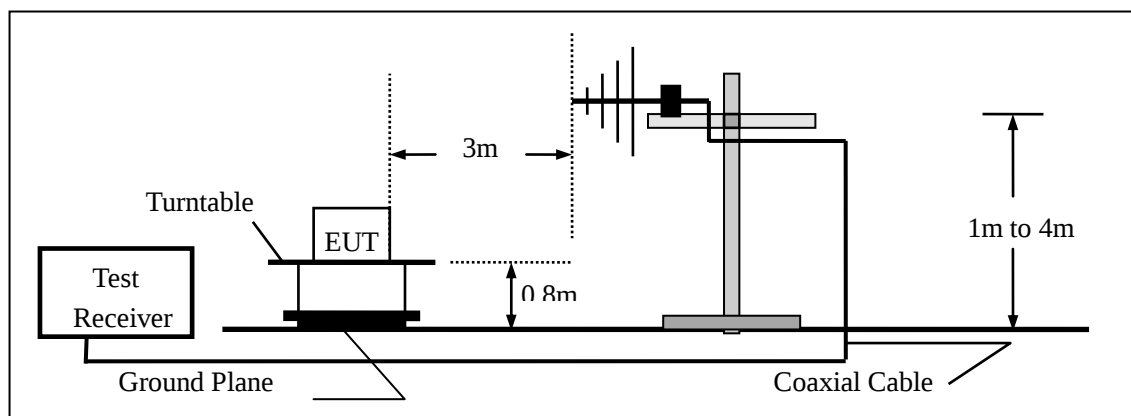
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.
5. Use the following receiver/spectrum analyzer settings:
 Span = wide enough to fully capture the emission being measured
 RBW=200Hz for 9KHz to 150KHz,
 RBW=9kHz for 150KHz to 30MHz,
 RBW=120KHz for 30MHz to 1GHz
 VBW $\geq 3 \times$ RBW
 Sweep = auto
 Detector function = QP
 Trace = max hold

6.2. Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



6.3. Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation Frequency tion at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

15.205 Restricted bands of operation

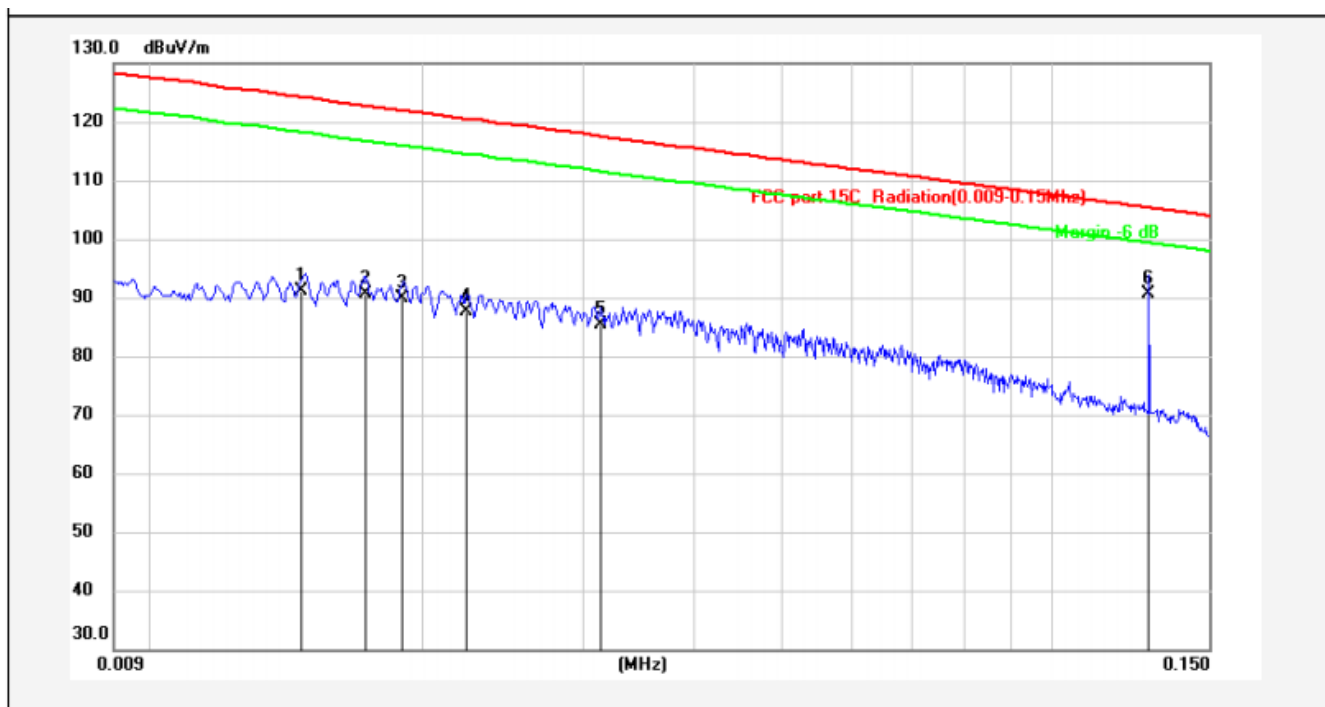
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

- Remark:
1. Emission level in dBuV/m=20 log (uV/m)
 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
 3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

6.4.Measurement Result

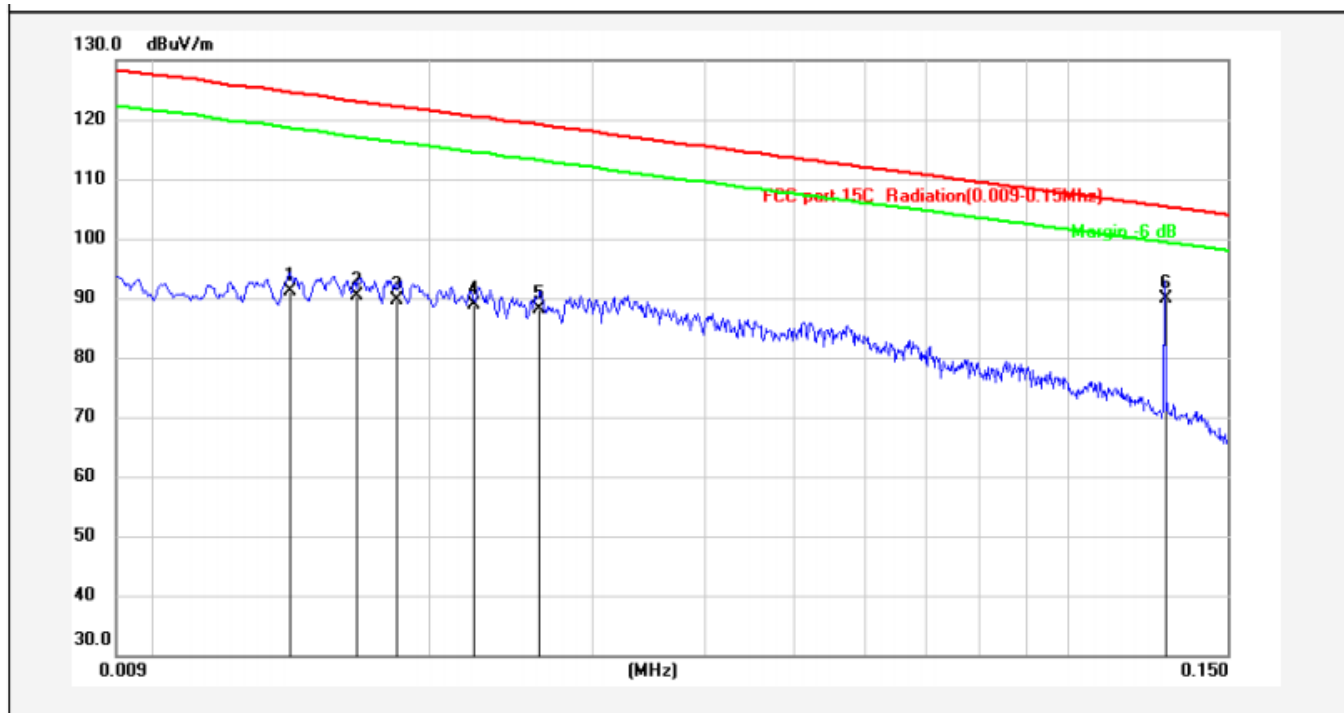
9kHz-150kHz:

X



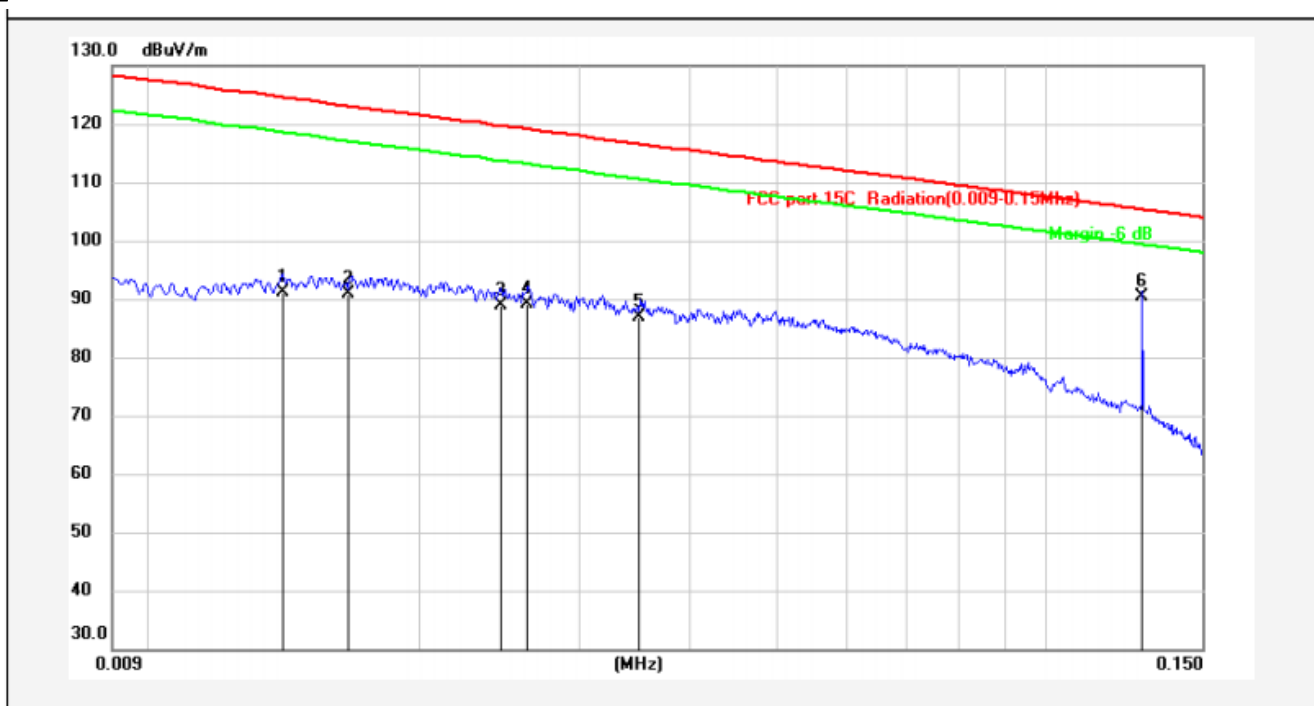
No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0146	90.83	0.27	91.10	124.29	-33.19	QP	
2	0.0172	90.29	0.31	90.60	122.86	-32.26	QP	
3	0.0189	89.49	0.31	89.80	122.04	-32.24	QP	
4	0.0223	87.29	0.31	87.60	120.60	-33.00	QP	
5	0.0315	85.17	0.33	85.50	117.59	-32.09	QP	
6	0.1280	90.32	0.38	90.70	105.38	-14.68	QP	

Y



No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0140	90.93	0.27	91.20	124.65	-33.45	QP	
2	0.0166	90.13	0.27	90.40	123.17	-32.77	QP	
3	0.0183	89.39	0.31	89.70	122.32	-32.62	QP	
4	0.0223	88.49	0.31	88.80	120.60	-31.80	QP	
5	0.0263	87.89	0.31	88.20	119.16	-30.96	QP	
6	0.1280	89.52	0.38	89.90	105.38	-15.48	QP	

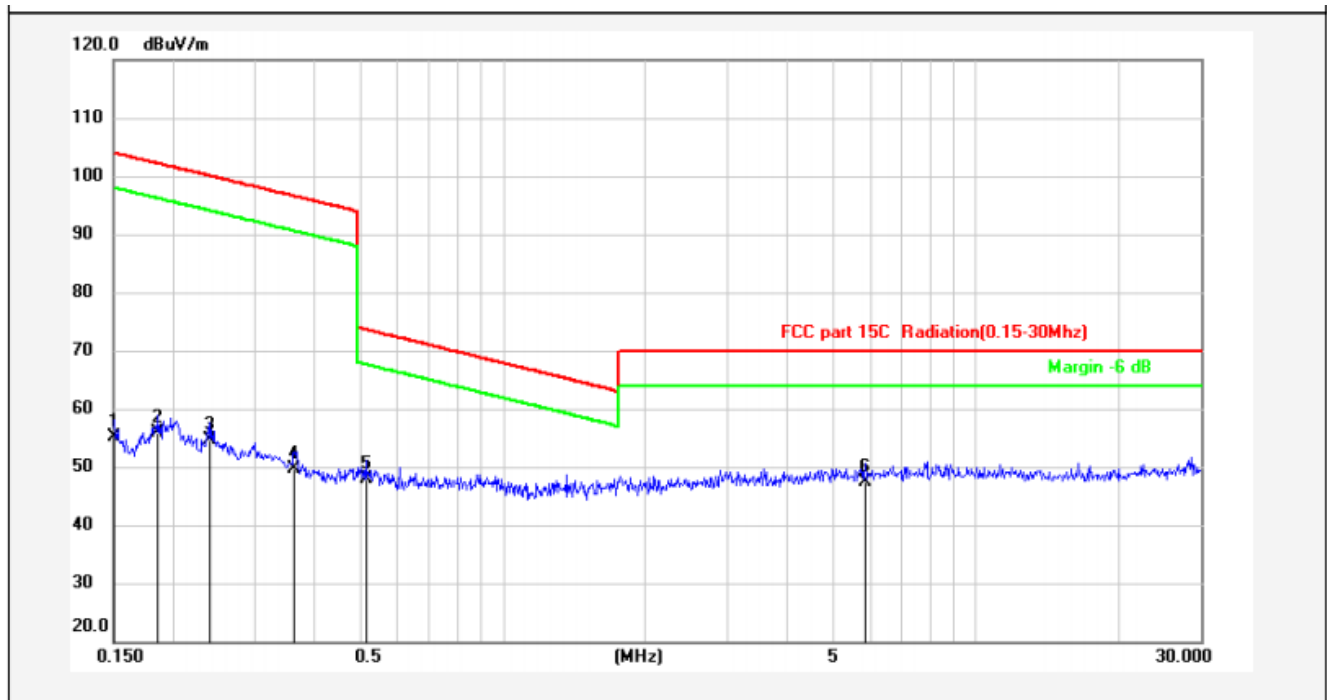
Z



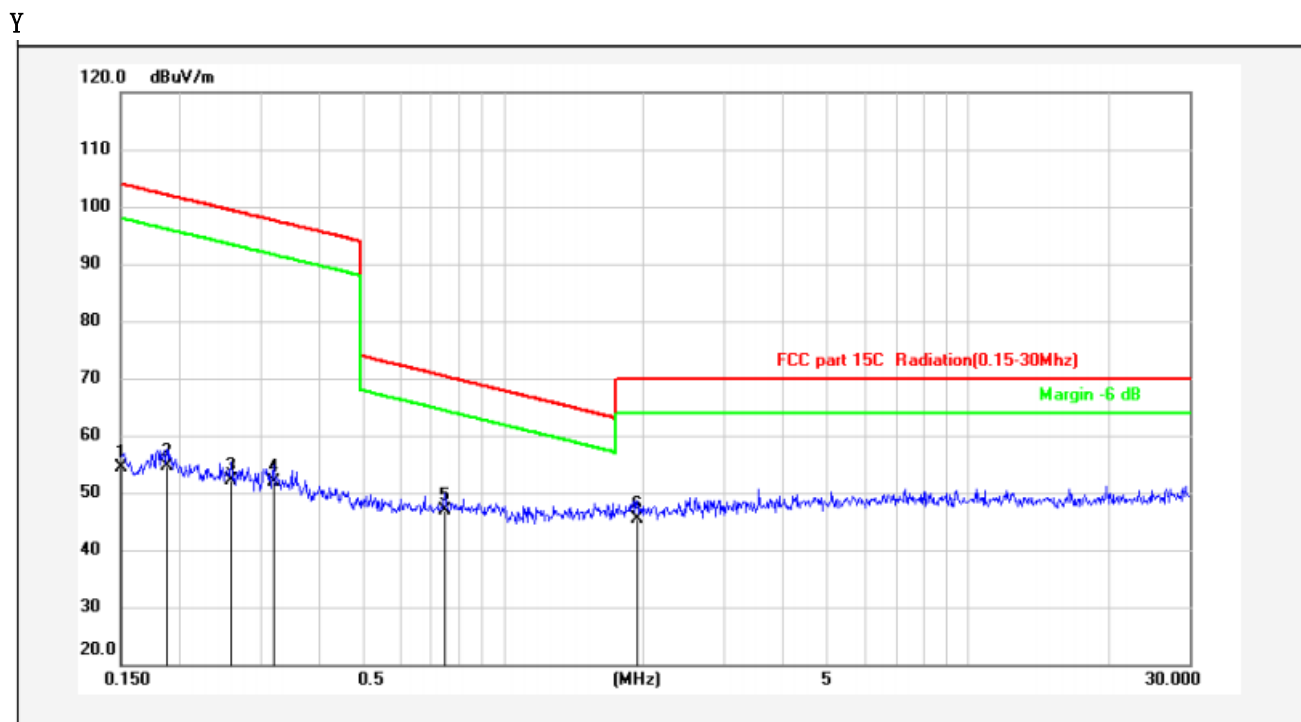
No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0140	90.93	0.27	91.20	124.65	-33.45	QP	
2	0.0166	90.63	0.27	90.90	123.17	-32.27	QP	
3	0.0245	88.49	0.31	88.80	119.78	-30.98	QP	
4	0.0263	88.89	0.31	89.20	119.16	-29.96	QP	
5	0.0350	86.47	0.33	86.80	116.67	-29.87	QP	
6	0.1280	90.12	0.38	90.50	105.38	-14.88	QP	

150kHz-30MHz:

X

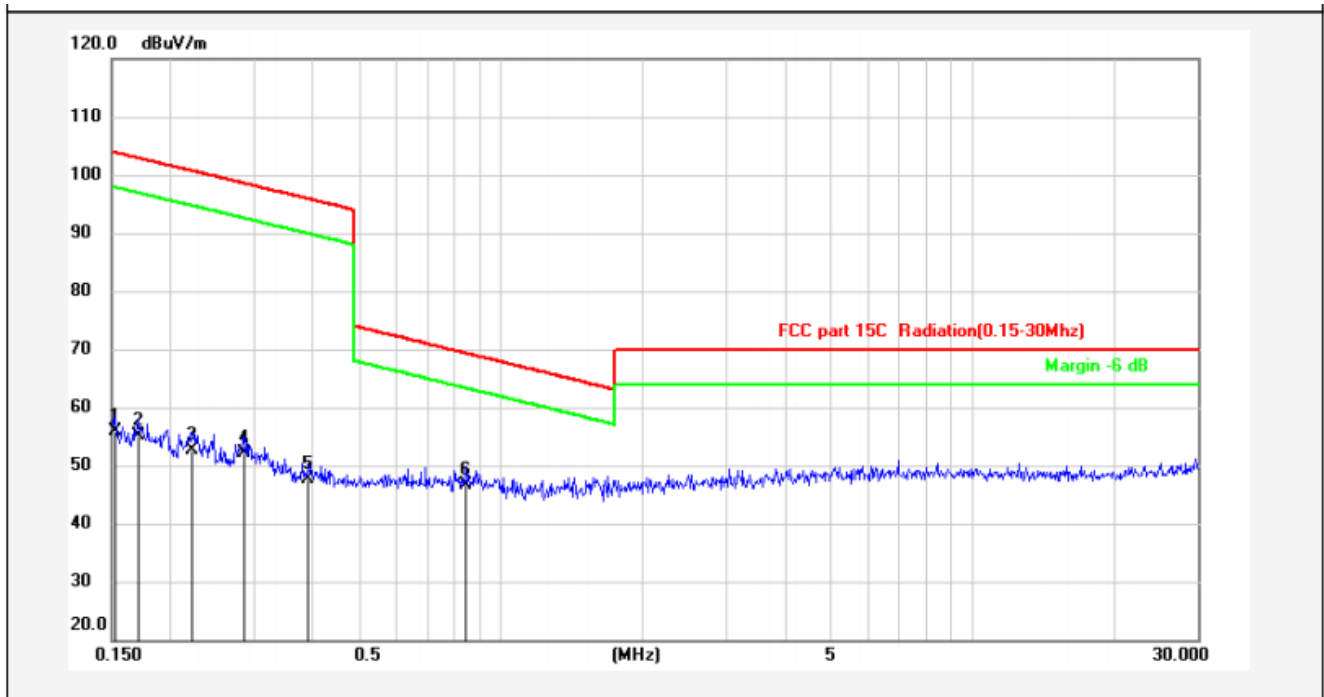


No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.1507	54.80	0.40	55.20	103.96	-48.76	QP	
2	0.1864	55.49	0.41	55.90	102.16	-46.26	QP	
3	0.2404	54.17	0.43	54.60	100.02	-45.42	QP	
4	0.3613	49.25	0.45	49.70	96.57	-46.87	QP	
5	0.5128	48.30	0.50	48.00	73.61	-25.61	QP	
6	5.8357	46.20	1.30	47.50	70.00	-22.50	QP	



No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.1500	54.00	0.40	54.40	104.00	-49.60	QP	
2	0.1884	54.19	0.41	54.60	102.07	-47.47	QP	
3	0.2589	51.77	0.43	52.20	99.39	-47.19	QP	
4	0.3200	51.45	0.45	51.90	97.60	-45.70	QP	
5	0.7469	46.21	0.59	46.80	70.36	-23.56	QP	
6	1.9386	44.78	0.72	45.50	70.00	-24.50	QP	

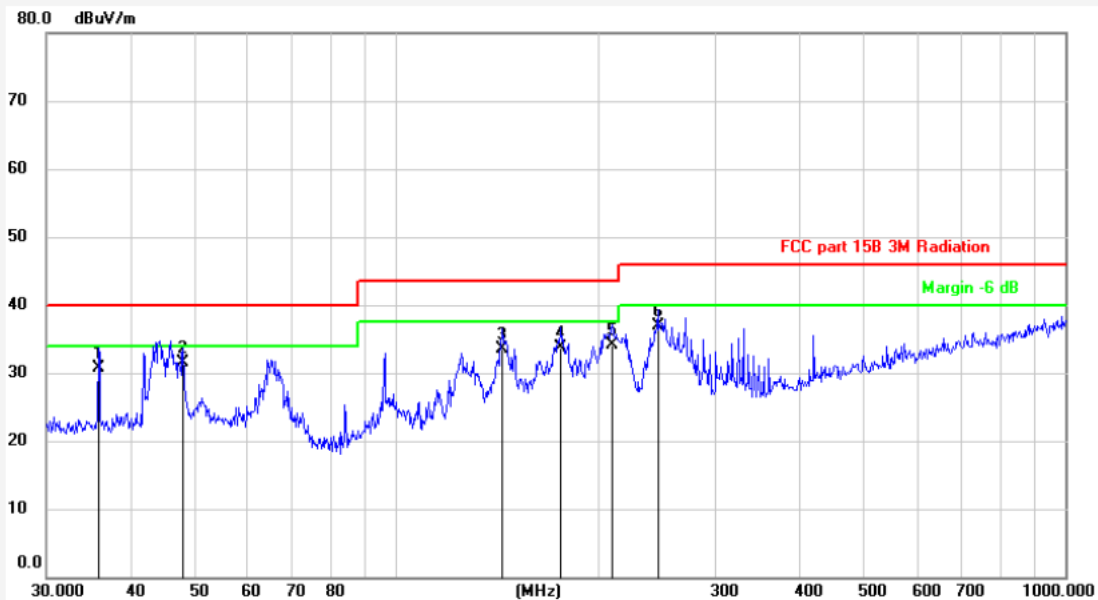
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No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.1524	55.50	0.40	55.90	103.87	-47.97	QP	
2	0.1711	54.69	0.41	55.10	102.89	-47.79	QP	
3	0.2220	52.27	0.43	52.70	100.69	-47.99	QP	
4	0.2862	51.67	0.43	52.10	98.54	-46.44	QP	
5	0.3914	47.15	0.45	47.60	95.90	-48.30	QP	
6	0.8437	46.09	0.61	46.70	69.30	-22.60	QP	

30MHz-1GHz:

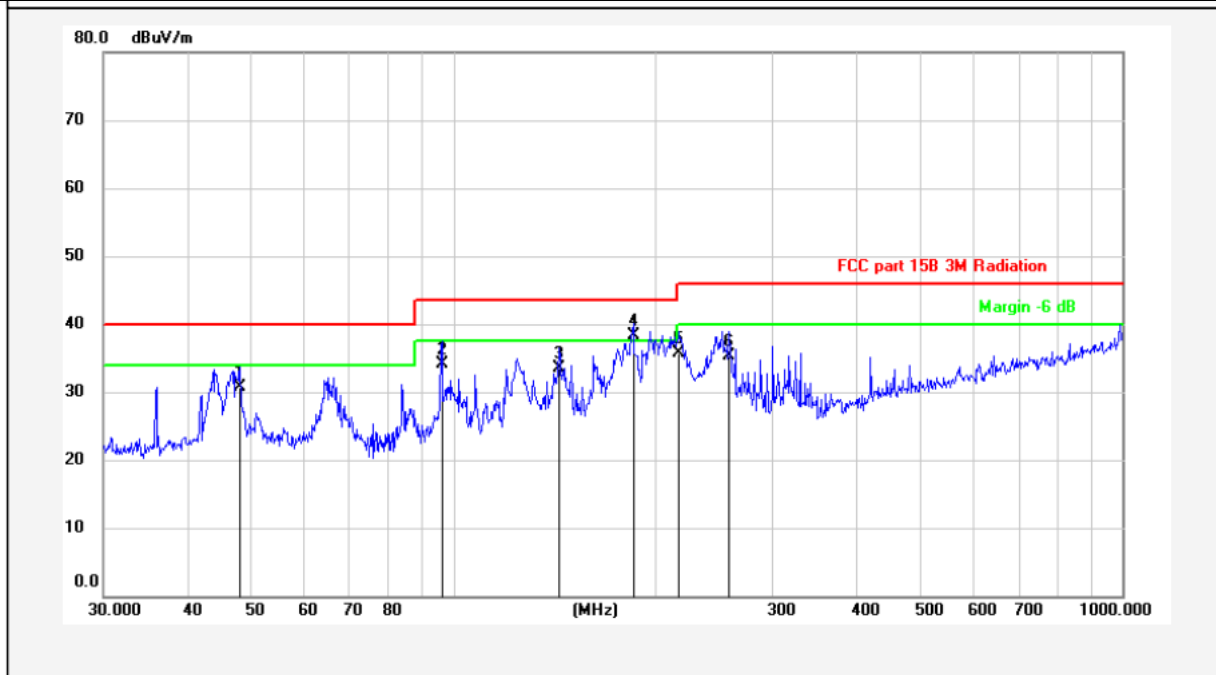
M/N	:	LKS057X				
Test Mode	:	Bluetooth speaker				
Test Phase	:	Vertical				
Test Voltage	:	DC 12V				
Test Engineer	:	Bing.He				
Test Date	:	2024.12.13				
Temperature (°C):	23.5	Relative Humidity (%):	55	Atmospheric Pressure(kPa) :	101.3	



No.	Frequency (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Cable (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	35.8746	16.64	12.76	1.3	30.70	40.00	-9.30	QP
2	47.9940	15.99	14.1	1.51	31.60	40.00	-8.40	QP
3	143.8295	21.84	9.15	2.51	33.50	43.50	-10.00	QP
4	176.2686	20.93	10.22	2.65	33.80	43.50	-9.70	QP
5	210.0482	19.85	11.5	2.85	34.20	43.50	-9.30	QP
6	245.9509	21.52	12.36	3.02	36.90	46.00	-9.10	QP

Note: Result=Reading+Antenna+Cable.

M/N	:	LKS057X				
Test Mode	:	Bluetooth speaker				
Test Phase	:	Horizontal				
Test Voltage	:	DC 12V				
Test Engineer	:	Bing.He				
Test Date	:	2024.12.13				
Temperature (°C):	23.5	Relative Humidity (%):	55	Atmospheric Pressure(kPa) :		101.3



No.	Frequency (MHz)	Reading (dBuV/m)	Antenna (dB/m)	Cable (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	15.09	14.1	1.51	30.70	40.00	-9.30	QP
2	96.0986	20.49	11.69	2.02	34.20	43.50	-9.30	QP
3	143.8292	21.84	9.15	2.51	33.50	43.50	-10.00	QP
4	185.7882	25.19	10.45	2.76	38.40	43.50	-5.10	QP
5	217.5443	20.90	11.85	2.95	35.70	46.00	-10.30	QP
6	258.3264	19.31	12.8	3.19	35.30	46.00	-10.70	QP

Note: Result=Reading+Antenna+Cable.

-----The end-----